UNITED STATES PATENT AND TRADEMARK OFFICE

NOTICE OF ALLOWANCE AND FEE(S) DUE

26304   7590   07/21/2009

KATTEN MUCHIN ROSENMAN LLP
575 MADISON AVENUE
NEW YORK, NY 10022-2585

EXAMINER
ENG, DAVID Y

ART UNIT	PAPER NUMBER
2455	

DATE MAILED: 07/21/2009

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,724	02/04/2004	Naofumi Kobayashi	FUJY 20.944	4952

TITLE OF INVENTION: DATA GENERATING DEVICE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	NO	$1510	$300	$0	$1810	10/21/2009

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.

B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: <u>Mail</u>

Mail Stop ISSUE FEE
**Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450**
or <u>Fax</u> **(571)-273-2885**

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

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Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission
I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

_____ (Depositor's name)

_____ (Signature)

_____ (Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/771,724	02/04/2004	Naofumi Kobayashi	FUJY 20.944	4952

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EXAMINER	ART UNIT	CLASS-SUBCLASS
ENG, DAVID Y	2455	709-238000

1. Change of correspondence address or indication of "Fee Address" (37 CFR 1.363).

❏ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.

❏ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. **Use of a Customer Number is required.**

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____

2 _____

3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE   (B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent) : ❏ Individual ❏ Corporation or other private group entity ❏ Government

4a. The following fee(s) are submitted:
❏ Issue Fee
❏ Publication Fee (No small entity discount permitted)
❏ Advance Order - # of Copies _____

4b. Payment of Fee(s): **(Please first reapply any previously paid issue fee shown above)**
❏ A check is enclosed.
❏ Payment by credit card. Form PTO-2038 is attached.
❏ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. **Change in Entity Status** (from status indicated above)
❏ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27.
❏ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____   Date _____

Typed or printed name _____   Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.   OMB 0651-0033   U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

UNITED STATES PATENT AND TRADEMARK OFFICE

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Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
(application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 790 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 790 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (http://pair.uspto.gov).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

PTOL-85 (Rev. 08/07) Approved for use through 08/31/2010.

	Application No.	Applicant(s)
Notice of Allowability	10/771,724	KOBAYASHI, NAOFUMI
	Examiner	Art Unit	
	DAVID Y. ENG	2455	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to *amendment filed 4/24/2009*.

2. ☒ The allowed claim(s) is/are *1,2,4,5,7-19,22 and 23*.

3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
       a) ☐ All   b) ☐ Some*   c) ☐ None of the:
           1. ☒ Certified copies of the priority documents have been received.
           2. ☐ Certified copies of the priority documents have been received in Application No. _____ .
           3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the
              International Bureau (PCT Rule 17.2(a)).
       * Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application. **THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.

5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
       (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
           1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
       (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of
           Paper No./Mail Date _____.
       Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).

6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☐ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08), Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit of Biological Material

5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413), Paper No./Mail Date _____ .
7. ☒ Examiner's Amendment/Comment
8. ☐ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____.

/DAVID Y. ENG/
Primary Examiner, Art Unit 2455

EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

No changes to the claims have been made. The claims are rewritten in full text as follows:

1. A data generating device comprising:

a reading unit to read out forward management information relating to a forwarding process of multicast data to be containing a multicast address as a destination address of a first layer from data of a second layer higher than the first layer, wherein each of the first layer and the second layer is one of layers defined on an OSI model;

a storage unit to store the forward management information read by the reading unit;

a data generating unit to identify one or more clients, each of which desires to receive multicast data and corresponds to a forward destination of the multicast data, based on the forward management information stored in the storage unit, to generate a same number of copies of the multicast data as a number of identified clients~ and to convert the destination address of the first layer of each copy of the multicast data being the multicast address into a first layer address of a corresponding one of the identified

clients so that a switching device accommodating the identified one or more clients

receives each copy of the multicast data converted the destination address of the first

layer to forward each copy of the multicast data to the identified one or more clients

based on data of the first layer of each copy of the multicast data.; and

a forwarding unit to forward each copy of the multicast data converted the

destination address of the first layer and generated by the data generating unit to the

switching device.

2. A data generating device according to claim 1,

wherein said data generating unit determines one or more clients, each of which

corresponds to the forward destination, based on the data of the second layer in the

multicast data.

3. (canceled)

4. A data generating device comprising:

a reading unit to read out information relating to a forwarding process of multicast

data including a multicast MAC address as a MAC destination address of a layer 2

defined on an OSI layer model from data of a layer higher than the layer 2;

a storage unit to store forward management information based on the information

read by said reading unit; and

a data generating unit to identify, based on the forward management information stored in the storage unit, one or more clients, each of which corresponds to a forward destination of the multicast data, to generate a same number of copies of the received multicast data as a number of identified clients to be forwarding destinations, and to convert the MAC destination address of each copy of the multicast data being the multicast MAC address into a unicast MAC address of a corresponding one of the identified clients as a destination address of the layer 2 of the data so that a switching device accommodating the identified one or more clients receives each copy of the multicast data converted the MAC destination address to forward each copy of the multicast data to the identified one or more clients based on data of the layer 2 of each copy of the multicast data.

5. A data generating device according to claim 4, wherein said data generating unit determines one or more clients, each of which corresponds to the forward destination, based on the data of the layer higher than the layer 2 in the multicast data.

6. (canceled)

7. A data generating device according to claim 4, further comprising:

Sending unit to send each copy of multicast data converted the MAC destination address and generated by said data generating unit and the received multicast data toward a downstream side.

8. A data generating device according to claim 4, further comprising managing

unit to update the forward management information stored in said storage unit on the

basis of the information read by said reading unit.

9. A data generating device according to claim 8, wherein in case the information

read by said reading unit is participation information indicating a participation in a

multicast group, said managing unit reflects contents of the participation information to

the forward management information stored in said storage unit.

10. A data generating device according to claim 9, wherein in case the

information read by the reading unit is leaving information that indicates leaving from the

multicast group, the managing unit deletes information relating to the client as a sender

of the leaving information from the forward management information.

11. A data generating device according to claim 9, further comprising time

measuring unit to measure a fixed period of time,

wherein in case the time measuring unit judges that a response to a response

request is not received for the fixed period of time or longer from the client, the

managing unit deletes information relating to this client from the forward management

information.

12. A data generating device according to claim 4, wherein said reading unit reads the information from a message of Internet group management protocol version 3.

13. A data generating device according to claim 4, wherein said reading unit reads the information from a message of multicast listener discovery version 2.

14. A data generating device according to claim 4, wherein said managing unit, when a message of internet group management protocol version 1 or version 2 is received, changes the forward management information on the basis of specifications of the internet group management protocol version 1 or version 2.

15. A data generating device according to claim 4, wherein said storage unit stores the forward management information including correspondence between an address of the client to which multicast data should be forwarded and a destination address of the multicast data.

16. A data generating device according to claim 15, wherein said storage unit stores the forward management information further including a source address of the multicast data.

17. A data generating device according to claim 10, wherein said storage unit stores the forward management information including correspondence between an address of the client to which multicast data should be forwarded and a destination address of the multicast data, and the data generating device further comprises client management information storage unit to store client management information based on the forward management information, wherein the client management information include a client identifier indicating the client to which the multicast data should be forwarded, a destination identifier indicating a transmission destination of the multicast data, a time when relationship between the client and the transmission destination of the multicast data have been stored in

the forward management information, and a time when the relationship have been deleted from the forward management information.

18. A data generating device according to claim 10, wherein said storage unit stores the forward management information including correspondence between an address of the client to which the multicast data should be forwarded, a destination address of the multicast data and a source address of the multicast data, and the data generating device further comprises client management information storage unit to store client management information based on the forward management information, wherein the client management information include a client identifier indicating the client to which the multicast data should be forwarded, a destination identifier indicating a transmission destination of the multicast data, a source identifier indicating a

transmission source of the multicast data, a time when relationship between the client

and the transmission destination of the multicast data have been stored in the forward

management information, and a time when the relationship have been deleted from the

forward management information.

19. A data generating device comprising:

a storage unit to store data relating to one or more clients desiring to receive

multicast data to be forwarded to one or more clients based on a protocol of a first layer,

wherein the multicast data includes an multicast address as an destination address of a

second layer lower than the first layer, and each of the first layer and the second layer is

one of layers defined on an OSI model; and

a data generating unit to generate, when accepts the multicast data, copies of

the multicast data per client to be forwarded thereto based on a protocol of the second

layer, the multicast data by changing to convert the destination address of the second

layer of each copy of the multicast data being the multicast address into an address of

the client desiring to receive the multicast data, on the basis of the data relating to one

or more clients that have been stored in said storage unit, and to give the copies of the

multicast data per client to a sending unit to send the each copy of the multicast data

toward one or more second layer switches accommodating one or more clients so that

one or more second layer switches device receive each copy of the multicast data

converted the destination address of the second layer to forward each copy of the

multicast data to one or more clients based on data of the second laver of each copy of

the multicast data.

20.-21. Cancelled.

22. A data generating method executed by an information processing device,

comprising:

reading forward management information on a forwarding process of multicast

data to be containing a multicast address as a destination address of a first laver from

data of a second layer higher than the first layer, wherein each of the first layer and the

second layer is one of layers defined on an OSI model;

identifying one or more clients, each of which desires to receive multicast data

and corresponds to a forward destination of the multicast data based on of the forward

management information;

generating a same number of copies of multicast data as a number of identified

clients;

converting the destination address of the first layer of each copy of the multicast

data being the multicast address into an first laver address of a corresponding one of

the identified clients so that a switching device accommodating the identified one or

more clients receives each copy of the multicast data converted the destination address

of the first layer to forward each copy of the multicast data to the identified one or more

clients based on data of the first layer of each copy of the multicast data; and

forwarding each of the pieces of transmission copy the multicast data converted the destination address of the first layer to the switching device.

23. A data generating method comprising:

reading information relating to a forwarding process of multicast data including a multicast MAC address as a MAC destination address of layer 2 defined on an OSI layer model from data of a layer higher than the layer 2;

storing forward management information based on the readout information;

identifying, based on the stored forward management information, one or more clients, each of which corresponds to a forward destination of the multicast data;

generating, from the multicast data, a same number of copies of the received multicast data as a number of identified clients to be forwarding destinations; and

converting the MAC destination address of each copy of the multicast data being the multicast MAC address into an unicast MAC address of a corresponding one of the identified clients as a destination address of the layer 2 of the data so that a switching device accommodating the identified one or more clients receives each copy of the multicast data converted the MAC destination address to forward each copy of the multicast data to the identified one or more clients based on data of the layer 2 of each copy of the multicast data.

24.-25. Cancelled